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(56) Documents cited  
GB 2088184 A GB 2024772 A GB 1562239 A  
GB 1291830 A WO 86/05065 A1 US 4586288 A  
US 3552059 A

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UK CL (Edition J) A1E, A4X, B8K  
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(54) Improvements in or relating to a support device for plants and/or a method of supporting plants

(57) A method and device for supporting a plant in which a flexible walled sachet is filled with a medium, the wall of said sachet being formed of a material which will resist accidental tearing or puncturing, yet enable the wall to be punctured at a selected time, puncturing the wall of said sachet and inserting plant material through the puncture in a manner such that the material defining the puncture substantially seals to said plant material. The medium is preferably a moisturised gel and the sachet wall includes a puncturable panel of foam plastics material. The sachet wall may be an uncoated nylon/polythene laminate

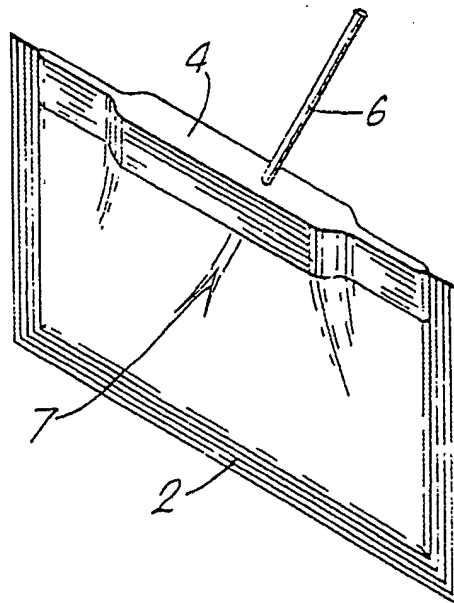


Fig. 3.

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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Fig.1.

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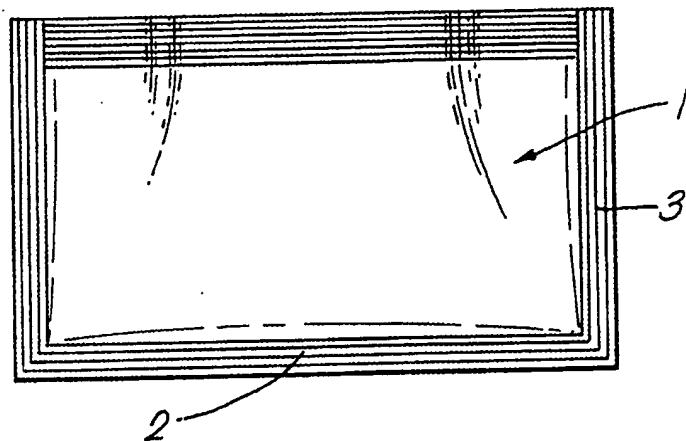
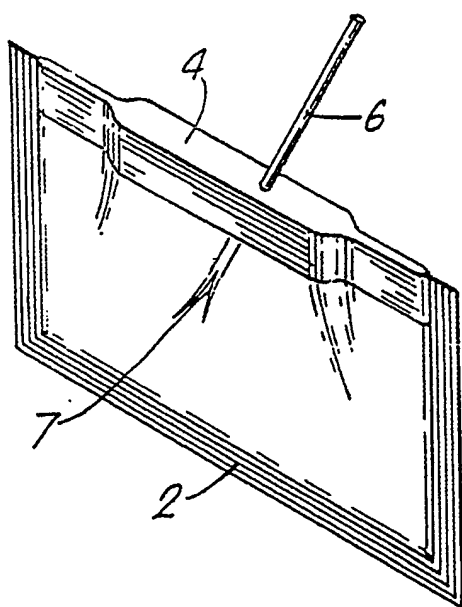


Fig.2.



Fig.3.



This invention relates to a support device for plants and/or a method of supporting plants, and in particular cut plants.

When transporting cut plants there is a tendency for those plants to lose their freshness at a quick rate. Attempts have been made to enhance or prolong the freshness of the cut plants, for example, by providing a vial of water with an aperture at the mouth through which aperture the stem of the cut plant is positioned. The aperture may be in a membrane closing the mouth of the solid vial. Such a construction forms part of the disclosure of German patent specification 2232181. Such constructions have disadvantages however, for example, there can be a tendency for the devices to leak, particularly, in the area where the membrane is placed over the rigid structure. Also the device can take up substantial space when the plant is packaged and also it can be awkward to insert the plant into the aperture which may not be of a suitable size. Thus it is necessary to, in general, make the aperture somewhat smaller than the expected plant stem diameter. The difficulties make such a construction disadvantageous.

It is therefore an object of the present invention to provide a support device for plants and/or a method of supporting plants which will go at least some distance towards obviating or minimising the foregoing disadvantages or which will at least provide the public with a useful choice.

Accordingly, in one aspect the invention consists in a support device for plants comprising a flexible walled sachet, a medium within said sachet, the wall of said sachet being formed of a material which will resist  
5 accidental tearing or puncturing, yet enable the wall to be punctured at a selected time for insertion of plant material through the puncture in such a manner that the material defining the puncture substantially seals to said plant material.

10 In a further aspect the invention consists in a method of supporting plants comprising the steps of providing a flexible walled sachet with a medium therein, the wall of said sachet being formed of a material which will resist  
15 accidental tearing or puncturing, yet enable the wall to be punctured at a selected time, puncturing the wall of said sachet and inserting plant material through the puncture in a manner such that the material defining the puncture substantially seals to said plant material.

To those skilled in the art to which the invention  
20 relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the scope of the invention as defined in the appended claims. The disclosures and the descriptions herein are purely  
25 illustrative and are not intended to be in any sense limiting.

One preferred form of the invention will now be described with reference to the accompanying drawings in which;

Figure 1 is a diagrammatic side elevation of a sachet forming a support device according to one preferred form of the invention,

Figure 2 is a diagrammatic plan view of the sachet of Figure 1, and

Figure 3 is a view of a sachet according to one preferred form of the invention showing a member inserted therein.

Referring to the drawings a support device for plants and/or a method of supporting plants are provided as follows.

The support device comprises a container or sachet 1 which contains a medium appropriate to the purpose such as a moisturised gel. The sachet 1 in the disclosed form is rectangular in shape and a suitable size has been found to be 10cm by 5.5cm although clearly different sizes and shapes could be used. The preferred sachet is relatively flat although of course the contents within the sachet will cause some bulging of the walls. The sachet is desirably made from an uncoated nylon/polythene laminate. The uncoated nylon being, for example, 15  $\mu$ m in thickness and the polythene being for example, 50  $\mu$ m in thickness. This material has properties which enables it to resist accidental tearing or puncturing whilst yet allowing the

material to be punctured if desired at a desired time in a manner such that a substantially liquid and airtight seal will be formed around a plant stem inserted into the aperture formed by puncturing. This material also has properties which enable it to be heat sealed. Thus the sachet may be formed by folding the material substantially in half about a fold line 2 and forming a heat sealed area 3 around the remaining three sides. Alternatively the sachet may be formed by heat sealing around all four sides so that two panels may be connected to form the sachet.

The moisturised gel contained within the sachet desirably is in the form of a liquid formed by a mix of a powder and preferably pure water such as deionized water. A suitable powder is sold under the trade mark AUSTRASORB grade 3 and is manufactured by Agrisob Pty. Limited, of 144 Riley Street, East Sydney, New South Wales, Australia. This material is a bio-degradable, non toxic, environmentally safe, super absorbent material. It is a starch grafted material which an organic filler added and is provided in the form of a white powder. The material will take up moisture but release it on demand to plant material in the immediate vicinity. A suitable mix of this powder and water is obtained by mixing at the rate of 300 grams of powder to 180 litres of water. This forms a mixture having a fluid paste consistency. Each sachet desirably contains between about 15 to 45 ml of the mixture. The grain size of the unmixed powder is about 0.5 mm. The above is a

suitable material for the medium within the sachet but of course other materials having suitable properties may be used.

In the preferred embodiment, shown in the drawings, rather than requiring the wall of the sachet to be punctured a puncturable insert or membrane is provided in the sachet and this may best be achieved by inserting a strip 4 of puncturable material along one edge of the sachet 1, for example by inserting between the sides of the sachet 1. A closed cell foam plastics material is preferred such as medium density polyethylene foam such as that sold under the trade name JIFFYCELL. The strip 4 can be about 1 cm deep and about 1 cm wide at the widest point. The above material is easily penetrable but will close onto for example a plant stem to the desired degree. If the foam is too dense penetration may be difficult and if too light then sealing onto the plant stem may not be adequate or the insert 4 may disintegrate in use.

The sachet above described is used by puncturing a hole in the insert 4 thereof, for example, by use of a suitable member such as a sharpened pencil. Into the hole so formed a stem 6 is then inserted and the material has the advantage that it will form substantially a seal around the stem 6 where it passes through the aperture.

The sachets can be produced on any suitable machine, for example, a TOYO automatic packaging machine, model M-10N which is modified for liquid filling by the addition

of a fluid pump and pipe work. The apparatus is manufactured by the Toyo Packaging Machine Manufacturing Company Limited, 1-11, 7-Chome, Kaminhigashi, Hirono-ku, Osaka, Japan.

5       The use of the invention is as follows.

In use, plant material can be inserted through a preformed puncture as above described. The plant material can then be transported or alternatively the construction can be used, for example, for the propagation of plants.

10       In this use however the insert could be open celled to allow air circulation. For transportation the freshness of the cut plant material is prolonged or enhanced because of the supply of moisture to the plant through the cut end 7 of the stem 6.

15       Where used for propagation purposes it is desirable to add suitable nutrients and material such as a root growth hormone to the gel so as to assist the propagation of the plant material.

20       Thus it can be seen that at least in the preferred form of the invention a supporting device for plants, and/or a method of supporting plants is provided which has some advantages. Because of the properties of the material from which the package can be formed there is little tendency for leakage to occur at the joint between the material  
25       defining the boundaries of the puncture and the stem. The tendency to leak is reduced by the fact that it is a gel material within the sachet. For transportation also the



package because it is flexible will tend to mould into the available space which makes the sachet more easily accommodated than a rigid vial.

- The sachet is also substantially straight-forward to
- 5 apply to a plant requiring only a simple puncturing movement to form a hole and the pushing of a stem therethrough.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A support device for plants comprising a flexible walled sachet, a medium within said sachet, the wall of said sachet being formed of a material which will resist accidental tearing or puncturing, yet enable the wall to be punctured at a selected time for insertion of plant material through the puncture in such a manner that the material defining the puncture substantially seals to said plant material.
2. A support device as claimed in claim 1 wherein a puncturable panel is provided in said wall.
3. A support device as claimed in claim 2 wherein said puncturable panel is provided in an edge of said sachet.
4. A support device as claimed in claim 2 wherein said puncturable panel is formed from foam plastics material.
5. A support device as claimed in claim 1 wherein said medium is moisturised gel.
6. A support device as claimed in claim 1 wherein said wall material comprises uncoated nylon/polythene laminate material.
7. A support device as claimed in claim 6 wherein said uncoated nylon layer is about 15  $\mu$ m in thickness.
8. A support device as claimed in claim 6 wherein said polythene layer is substantially 50  $\mu$ m in thickness.
9. A support device as claimed in claim 5 wherein said moisturised gel comprises a mixture of water and starch material.

10. A method of supporting plants comprising the steps of providing a flexible walled sachet with a medium therein, the wall of said sachet being formed of a material which will resist accidental tearing or puncturing, yet enable the wall to be punctured at a selected time, puncturing the wall of said sachet and inserting plant material through the puncture in a manner such that the material defining the puncture substantially seals to said plant material.
11. A method of supporting plants as claimed in claim 10 wherein said sachet includes a puncturable panel in the wall thereof and said step of puncturing said wall comprises the step of puncturing said puncturable panel.
12. A method of supporting plants as claimed in claim 10 wherein said medium comprises moisturised gel.
13. A method of supporting plants as claimed in claim 12 wherein said moisturised gel comprises a mixture of water and starch material.
14. A method of supporting plants as claimed in claim 13 wherein said moisturised gel further includes nutrients and hormone material.
15. A support device for plants substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.
16. A method of supporting a plant substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.